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Regulation and Adaptation of Management Accounting Innovations: The Case of Economic Value Added in Thai State-Owned Enterprises

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Abstract

Research on the diffusion of management accounting innovations (MAIs) has grown into a substantial literature which draws attention to how diffusion processes can be fuelled by compulsory regulation. However, relatively little is known about how MAIs interact with wider regulatory processes in society and how this affects the adaptation of such innovations as they diffuse across organisations. This paper extends research on this topic by addressing the questions of how regulators mediate the adaptation of MAIs and how this mediation affects the use of such innovations across regulatees. We explore these questions in relation to the evolution of Economic Value Added (EVA^{TM}) as a compulsory performance management system for state-owned enterprises (SOEs) in Thailand. Theoretically, we extend research on management innovations with sociological research, which sees regulation as an evolving and collaborative process that unfolds as an integral part of broader, societal reform programmes. Consistent with this perspective, we show how regulators can fill a key role as mediators by engaging in ongoing consultations with the suppliers of MAIs as well as regulatees, and how this imbues the regulatory standards that govern the use of such innovations with considerable flexibility. We also extend this perspective on regulation by showing how the regulatory standards governing EVA^{TM} were influenced by multiple, and partly competing, reform programmes centred on other innovations. In addition, we show how the mediating role of regulators enables regulatees to influence the evolution of regulatory standards and how this facilitates compliance with regulation and allows regulatees to adapt MAIs to industry-specific regulations and cultural characteristics. We discuss the implications of these findings for the sociological literature on regulation informing this paper and for research on the diffusion of MAIs.

Key words: adaptation, diffusion, Economic Value Added, management accounting innovations, regulation, state-owned enterprises.

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1. Introduction

The last three decades have witnessed a surge of innovation in management accounting techniques and practices. Academic research on management accounting innovations (MAIs), such as Activity-Based Costing and the Balanced Scorecard, has also flourished and now constitutes a substantial but rather diverse literature (see Euske and Malina, 2013; Ittner and Larcker, 2001; Zawawi and Hoque, 2010). An important stream of research concerns the diffusion of MAIs across organisations (see Ax and Bjørnenak, 2007; Granlund and Lukka, 1998). Empirical inquiries into this topic have been dominated by survey-based studies exploring the influence of various contextual factors on the adoption, implementation and use of MAIs (e.g., Ax and Greve, 2017; Baird *et al*., 2004; Bjørnenak, 1997; Burkert and Lueg, 2013; Gosselin, 1997; Johansson and Siverbo, 2009; Krumwiede, 1998; Lovata and Costigan, 2002; Naranjo-Gil *et al*., 2009; Speckbacher *et al*., 2003). Most of this research portrays diffusion as a process of voluntary adoption of innovations, driven by either rational choice or imitation of other organisations, but also includes a smaller number of studies exploring how diffusion processes can be fuelled by compulsory regulation (e.g., Cavalluzzo and Ittner, 2004; Jackson and Lapsley, 2003; Lapsley and Wright, 2004; Malmi, 1999). This latter body of research has studied the regulatory pressures to adopt MAIs in terms of coercive isomorphism (DiMaggio and Powell, 1983) or forced selection (Abrahamson, 1991), but pays scant attention to how the regulatory standards that govern such innovations take shape. This arguably leads to a rather simplistic view of regulation as flowing unilaterally from regulators, such as government bodies or corporate headquarters[1], and imposing relatively rigid standards on regulatees. However, a small but growing number of field studies have started to enrich this picture by showing how MAIs can be implicated in complex regulatory processes which leave considerable scope for the adaptation of such innovations (e.g., Ahrens and Khalifa, 2015; Hayne and Free, 2014; Hopper and Major, 2007; Modell, 2012a; Modell

[1] Whilst most research on the diffusion of MAIs conceives of various government bodies as the source of compulsory regulation, we recognise that similar forms of regulation can emerge *within* individual organisations (see Ansari *et al*., 2014; Canato *et al*. 2013; Malmi, 1999). Hence, in principle, the substantive research problem advanced here should be seen as applicable to both settings, although our empirical analysis focuses on the former.

et al., 2007; Suutheewasinnon *et al*., 2016). This has recently led to calls for more research into how MAIs interact with wider regulatory processes in society (Modell, 2012b, 2014; Van der Stede, 2011; Wagenhofer, 2016).

Answering the calls for more research into how MAIs interact with regulatory processes, whilst recognising that such processes can entail significant adaptations, is important for enhancing our understanding of how innovations come to vary as they diffuse within particular populations of organisations. Whilst much of the earlier research on the diffusion of management innovations tended to associate diffusion with strong pressures for uniformity (Abrahamson, 1991; DiMaggio and Powell, 1983; Strang and Soule, 1998), more recent work shows that diffusion processes almost inevitably foster variations as organisations adapt innovations to fit their specific circumstances (e.g., Ansari *et al*., 2010, 2014; Birkinshaw *et al*., 2008; Canato *et al*., 2013; Fiss *et al*., 2012; Gondo and Amis, 2013; O'Mahoney, 2007; Slager *et al*., 2012). Some of this recent research draws attention to the ways in which regulatory standards, governing the use of management innovations, come to entail a considerable amount of flexibility due to mutual adjustments between regulators and regulatees (Ansari *et al.*, 2014; Canato *et al*., 2013; Slager *et al*., 2012). Similar observations have been made in the literature on MAIs by scholars who show that specific innovations can become imbued with considerable flexibility and that this flexibility enhances their applicability in a broad range of organisational contexts (Ax and Bjørnenak, 2005, 2007; Modell, 2009). However, little attention has been paid to how regulators and regulatees collectively work towards imbuing MAIs with the necessary degree of flexibility, and how this affects the use of such innovations. Even though increasing attention is now being paid to the so-called supply side of the diffusion of MAIs (e.g., Alcouffe *et al*., 2008; Ax and Bjørnenak, 2005; Cooper *et al*., 2017; Gibassier, 2017; Hayne and Free, 2014; Qu and Cooper, 2011), only a handful of studies provide insights into how the adaptation of such innovations can be shaped by the interventions of regulators as they liaise with suppliers (e.g., consultants) as well as the regulatees that have to adopt those innovations (Hopper and Major, 2007; Modell *et al*., 2007). In short, little is known about how regulators mediate the adaptations of MAIs and how this mediation affects the development of regulatory standards and the possibilities for regulatees to adapt the innovations to their organisation-specific needs. Addressing these issues is important to enhance our understanding of how MAIs are implicated in regulatory processes and how regulators affect the diffusion of such innovations.

The above discussion raises questions about the ways in which regulators mediate the adaptation of MAIs and how this mediation affects their use across regulatees. We explore these questions in relation to the diffusion of Economic Value Added (EVA™) in state-owned enterprises (SOEs) in Thailand. The concept of EVA™ is arguably one of the foremost MAIs emerging since the late 1980s (Bouwens and Spekle, 2007; Ittner and Larcker, 1998). As a financial management system promising to compel managers to maximise returns to shareholders, it has risen to prominence as an integral part of the shareholder value movement (Ezzamel *et al*., 2008; Fiss and Zajac, 2004; Froud *et al*., 2000). Yet the diffusion of EVA™ has been subject to relatively limited empirical research compared to other MAIs (Zawawi and Hoque, 2010). Whilst constituting a trademark-protected innovation, devised by the US-based consulting firm Stern Stewart & Co, it has been introduced as an inherently flexible and adaptable system that is applicable in a broad range of organisational contexts (see e.g., Stern *et al*., 1995, 2001). Prior research has shown that EVA™ use varies significantly across organisations (Burkert and Lueg, 2013; Malmi and Ikäheimo, 2003) and that variations are due, in part, to differences in the regulatory environments (Chiwamit *et al*., 2014; Francis and Minchington, 2002; McLaren *et al*., 2016). The diffusion of EVA™ thus provides an interesting focus for a study of how regulators mediate the adaptation of MAIs and how this mediation affects the use of the innovations across regulatees.

To theorise these issues we extend the literature on management innovations by drawing on sociological research on regulation, which stresses that the regulatory standards that govern innovations evolve through the collective efforts of diverse actors whilst being embedded in broader, societal reform programmes (see reviews by Brunsson *et al*., 2012; Djelic and den Hond, 2014; Timmermans and Epstein, 2010). In contrast to traditional approaches to regulation, based on a view of regulatory standards as predominantly devised by the State and imposed on regulatees in a unilateral manner, this perspective recognises the evolutionary nature of regulation as a collaborative process. In our research, we observe that the Thai government initially sought to impose EVA™ in a relatively forceful manner to support the privatisation of SOEs, but that the regulatory standards devised to that end were gradually adapted as regulators collaborated with suppliers and individual SOEs to reconcile EVA™ with the regulatory environment in which the SOEs are embedded.[2] This collaborative

[2] An earlier study (Chiwamit *et al*., 2014) compared this over-riding reform process with the introduction of EVA™ in Chinese SOEs, where its diffusion has relied less heavily on external consultants whilst being subject

approach to regulation continued to evolve as the reform programme underpinning the diffusion of EVA™ had to be adapted to other reform programmes and extant regulations. This imbued the regulatory standards governing the use of EVA™ with considerable flexibility and enabled organisation-specific adaptations of the system to emerge across the individual SOEs. Our findings show that such adaptations varied with the differences in industry-specific regulations and cultural characteristics according to the extent to which they were (or were not) consistent with the EVA™ system. We discuss the implications of these findings for the sociological literature on regulation informing this paper and for research on the diffusion of MAIs.

The remainder of the paper proceeds as follows. We start by advancing an analytical framework, grounded in the perspective on regulation as a collaborative process, and then we use this framework as a basis for reviewing extant research on how MAIs interact with regulatory processes. Next we describe the research methods applied, before offering a longitudinal analysis of the evolution of EVA™ in the Thai SOE sector. The concluding section discusses our key contributions and their implications for future research on regulation and the diffusion of MAIs.

2. Analytical Framework and Literature Review

The efforts to re-conceptualise the way regulatory processes work, which inform this paper, have emerged against a backdrop of the changing face of regulation in contemporary society and have been spearheaded by attempts to expand the analysis of regulation in wider spheres of society, including the private as well as the public sectors. In contrast to the popular view that the past decades of globalisation and public policy reforms have ushered in an era of unprecedented deregulation, scholars have demonstrated that regulation is not only increasing (e.g., Djelic and Sahlin, 2009; Hall *et al*., 1999; Hood *et al*., 1999, 2000), but also that the nature of regulation is changing (e.g., Braithwaite, 2008; Brunsson and Jacobsson, 2000; Djelic and Sahlin-Andersson, 2006; Levi-Faure, 2005; Mörth, 2004). This literature is unified by a shift away from a view of the nation state as the regulator *par excellence*, exercising a monopoly on regulatory powers in society, to a growing recognition that a wider range of

to extensive state regulation. However, this earlier study did not examine the influence of individual SOEs on the development of regulatory standards and how this gives rise to organisation-specific variations in the use of EVA™.

actors, with vested interests, participate in regulatory processes and contribute to the shaping of regulatory systems. Even though nation states, represented by various government bodies, are still important actors in such processes, they are increasingly sharing responsibility for the development of regulation with other actors who have overlapping or conflicting interests. This is leading to a view of regulation as an evolving and relatively dispersed phenomenon that does not necessarily flow unilaterally from national governments. Instead, the development of regulation is increasingly seen as embedded in broader, societal reform programmes, promoting the spread of neo-liberalism and market competition, which state as well as non-state actors seek to influence (Braithwaite, 2008; Djelic and Sahlin, 2009; Levi-Faure, 2005).

The more specific focus of this paper is on the evolution of regulatory standards within such broader reform programmes. Research on this topic has grown into a substantial literature (e.g., Brunsson and Jacobsson, 2000; Brunsson *et al*., 2012; Djelic and den Hond, 2014; Higgins and Tamm-Hallström, 2007; Timmermans and Epstein, 2010), which is exercising increasing influence on research on financial accounting standards (e.g., Alon and Dwyer, 2016; Baudot, 2014; Botzem, 2014; Botzem and Quack, 2009) and other forms of extra-organisational governance standards (e.g., Bozanic *et al*., 2012; Mehrpouya, 2015; Mehrpouya and Samiolo, 2016; Rasche, 2010). Much of this research has emphasised the voluntary nature of regulation and sees regulatory standards as a relatively malleable and flexible phenomenon (Timmermans and Epstein, 2010). An important insight underpinning this view is that the actors who are the subjects of regulation (the regulatees) often take an active part in shaping the regulatory standards which are used to govern their behaviour. This leads to an understanding of regulation as a collaborative process, requiring an element of voluntary participation and continuous adaptation, rather than the unilateral imposition of regulatory restrictions on recalcitrant regulatees (see e.g., Mehrpouya and Samiolo, 2016; Rasche, 2010). Whilst prior research on regulation has often regarded the involvement of regulatees as entailing a risk of regulatory capture, which allows vested interests to exercise undue influence over regulatory processes, the view of regulation advanced above suggests that such involvement often facilitates compliance with emerging standards (see e.g., Bozanic *et al*., 2012; Brunsson and Jacobsson, 2000; Djelic and Sahlin, 2009). However, this does not mean that regulation is necessarily devoid of state-initiated sanctions or other forms of coercive pressures. State actors often continue to play an important role in policing regulatory

standards and overseeing compliance (Djelic and Sahlin, 2009; Rasche, 2010) and can fill a crucial role as mediators who facilitate the diffusion of such standards (Djelic, 2011).

The view of regulation outlined above compels us to re-think the way in which the diffusion of management innovations unfolds and has two major implications for our analysis. First, the view of regulation as a dispersed phenomenon, involving a range of state and non-state actors, reinforces the need to re-conceptualise the processes through which management innovations are adapted as they diffuse across organisations. Much of the existing literature on management innovations invokes a relatively simple, market-like view of diffusion processes as flowing from a clearly defined supply side to the adopters who constitute the demand side (Ansari *et al*., 2010). This view generally implies a conception of innovations as initially generated by suppliers, such as influential management consultants, and then adopted and subsequently further adapted by individual organisations on a relatively autonomous basis (Ansari *et al*., 2010; Damanpour, 2014; Volberda *et al*., 2014). However, the literature on regulation informing our analysis underscores the need to move away from the conception of diffusion as a market-like phenomenon, and to pay attention to how regulators facilitate diffusion by working with both suppliers of management innovations and the regulatees to adapt 'global' innovations to particular social contexts (cf. Djelic, 2011). For instance, Slager *et al*. (2012) demonstrate how an emerging standard for producing a socially responsible investment index derived its regulatory power through a complex interplay between a range of actors, including the suppliers and adopters of the index as well as actors charged with regulating its use. Furthermore, the attempts to regulate the standard had several unanticipated consequences which prompted continuous adaptations to preserve its regulatory power as the diffusion process unfolded. This underlines the need to pay greater attention to adaptation as an ongoing process which involves repeated exchanges between the suppliers of innovations, the regulators and also the regulatees, as it evolves over time.

Second, the insight that regulators are not necessarily impervious to the interests and needs of regulatees suggests that we need to avoid treating the diffusion of management innovations as a process of either voluntary adoption or coercive enforcement (cf. Abrahamson, 1991; DiMaggio and Powell, 1983). Whilst the literature on regulation reviewed above has emphasised the voluntary nature of standard-setting, such processes may need to be accompanied by an element of coercion to gain traction (Rasche, 2010; Timmermans and Epstein, 2010). Insofar as diffusion processes are mediated by regulators who possess coercive powers, we can expect an explicit or implicit threat of coercion to prevail, even

though the regulatees still enjoy significant discretion in complying with the regulations (Djelic and Sahlin, 2009). This introduces a certain degree of choice into the regulatory process and implies that regulatees may experience differences in the extent to which they can adapt particular innovations, even where the adoption of the innovations is compulsory. Suppliers and regulators may create a degree of choice by distinguishing between mandatory and discretionary attributes of particular innovations and thereby preserve a level of uniformity whilst simultaneously allowing regulatees to adapt the innovations to their specific circumstances (Ansari *et al*., 2014). For instance, Wright *et al.* (2012, p. 656) illustrate that consultants not only seek to adapt management innovations, but also to standardise some of their attributes and thus engage in "a form of consulting as regulation". Hence the restrictions and choices available to regulators may be designed into the innovations at an early stage of the diffusion process, although regulators may try to influence them through their interactions with suppliers. Consistent with the view of regulation informing this paper, we also need to recognise that the efforts of regulators to balance restrictions and choices entail exchanges with the regulatees, which enable the latter to influence the standards governing their use of the innovations (cf. Ansari *et al*., 2014; Canato *et al*., 2013; Slager *et al*., 2012).

Figure 1 summarises the regulatory dynamics discussed above and illustrates how regulators fill a mediating role by working with both suppliers and regulatees to adapt management innovations. Through their efforts to standardise and adapt innovations, suppliers offer regulators a mix of restrictions and choices which can enable the regulators to adapt the innovations to fit particular populations of organisations. By interacting with suppliers, regulators can also influence innovations before they are incorporated into regulatory standards. Through the standard-setting process regulators can impose further restrictions and regulate the choices available to regulatees, whilst the latter may also exercise a greater or lesser degree of influence over such processes. This may, in turn, affect the regulatees' ability to adapt management innovations to their organisation-specific context and to generate variations in the use of such innovations. Although we do not expect all of the reciprocal relationships between suppliers, regulators and regulatees, depicted in Figure 1, to be equally salient over time, the figure provides a starting point for examining how regulatory dynamics evolve throughout the process of adapting management innovations.

Insert Figure 1 here.

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Extant research on MAIs only provides partial and fragmented evidence about the way the regulatory dynamics depicted in Figure 1 unfold. Starting with the relationship between suppliers and regulators, several studies have noted that MAIs propagated by influential academics and consultants can have a more or less direct impact on the mix of choices and restrictions embedded in regulatory standards (e.g., Chang, 2009; Hayne and Free, 2014; Modell, 2012b; Northcott and France, 2005; Suutheewasinnon *et al*., 2016). Chang (2009), for instance, illustrates how the Balanced Scorecard was used as a template for the development of a new performance measurement system in the UK National Health Service and how this restricted the pursuit of performance improvements to politically significant targets. Similarly, Hayne and Free (2014) document how a broad range of actors, including academics, consultants and professional bodies, who espoused diverse conceptions of risk management, worked together with a regulatory body (the Committee of Sponsoring Organizations) to establish a new regulatory standard for Enterprise Risk Management. Their study provides a rich account of how the collective deliberations of a dispersed set of actors imbued an essentially voluntary risk management standard with regulatory power (cf. Brunsson and Jacobsson, 2000). However, it provides few insights into whether or how regulatees influenced the development of the standard once it started to diffuse across various social contexts. As demonstrated by Paape and Spekle (2012), this standard has given a considerable impetus to the adoption of risk management practices, but has had little impact on the effectiveness of those practices. This underlines the need to extend research on MAIs beyond the evolving relationships between suppliers and regulators and to explore how regulatory processes enable regulatees to influence the innovations and how this affects their efficacy in particular contexts.

Existing research which has examined the ways in which the relationships between regulators and regulatees shape the diffusion of MAIs has mainly documented how regulatees respond to pressures for compulsory adoption of particular innovations (Arnaboldi and Lapsley, 2003; Cavalluzzo and Ittner, 2004; Jackson and Lapsley, 2003; Lapsley and Wright, 2004; Malmi, 1999; Siti-Nabiha and Scapens, 2005). Much of this research shows that the restrictions associated with such pressures often exacerbate the problems of adapting innovations to operating-level activities and foster relatively symbolic compliance (Arnaboldi and Lapsley,

2003; Cavalluzzo and Ittner, 2004; Siti-Nabiha and Scapens, 2005). However, some studies illustrate that regulation entailing a greater degree of voluntary compliance, or choice, can encourage regulatees to adapt the innovations and to embed them in their management control practices (Ahrens and Khalifa, 2015; Modell, 2012a). For instance, Modell (2012a) illustrates how a Swedish central government agency initially adopted the Balanced Scorecard on a voluntary basis, but subsequently adapted it to the emerging regulatory priorities of the Government. This led to a situation in which the control practices emanating from the Balanced Scorecard gradually formed an integral part of the agency's monitoring of its compliance with government regulation. However, the research which has explored the way individual organisations respond to regulatory pressures to adopt MAIs has paid little attention to the ability of regulatees to influence the regulatory standards governing those innovations.

To the best of our knowledge, only two studies have sought to bridge the gap between the two strands of research reviewed above and thereby advance a more holistic view of the way in which regulators mediate the adaptation of MAIs (Hopper and Major, 2007; Modell *et al*., 2007). Both studies explore how regulatory standards evolved through collaboration between suppliers and regulators, and how this collaboration subsequently opened up opportunities for regulatees to adapt the innovations. Hopper and Major (2007) show that a consulting firm persuaded the European Commission to use Activity-Based Costing as the basis for price regulation in the market for telecommunication services in the European Union. They then study how the regulatory standards emerging from this interplay enabled an individual telecommunications operator to adapt Activity-Based Costing and render it useful for managerial decision-making. Similarly, Modell *et al.* (2007) illustrate how novel performance measurement practices, inspired by Total Quality Management, were partly incorporated into a new governance model for Swedish central government agencies and how this enabled individual agencies to adapt the model to their organisation-specific needs. These findings show that regulators fill an important mediating role between suppliers and regulatees that facilitates the adaptation of MAIs. However, similar to the other studies of MAIs reviewed above, neither Hopper and Major (2007) nor Modell *et al.* (2007) offer detailed insights into how regulatees can exercise more direct influence on regulatory standards. Moreover, neither of these studies explored how variations in the use of MAIs emerge as a result of adaptations that have their origins in different organisational contexts. Hence, we have very limited knowledge of how regulatees can work with regulators to

influence the standards which govern MAIs and how the restrictions and choices embedded in such standards can breed variations in the use of those innovations across organisations.

Our review of how MAIs can become implicated in regulatory processes underlines the need for further research into the complex interplay between suppliers, regulators and regulatees, and how this interplay affects the adaptation of the innovations. In particular, it draws attention to the paucity of more holistic studies of how regulators mediate such adaptations as they evolve over time and how regulatees can influence the process of adaptation such that it meets their organisation-specific needs. Even where the mediating role of regulators has been a key focal point (Hopper and Major, 2007; Modell *et al*., 2007), little attention has been paid to the involvement of regulatees in the formation of the regulatory standards that govern MAIs. This stands in stark contrast to research on other types of accounting standards, which has increasingly emphasised the influence of regulatees on the standard-setting process (e.g., Alon and Dwyer, 2016; Bozanic *et al*., 2012; Mehrpouya and Samiolo, 2016). Addressing these limitations is important in order to enhance our understanding of regulation as a collaborative process, and thereby to move beyond market-like depictions of diffusion which confine the analysis to the interactions between suppliers and adopters. In what follows, we examine how regulators mediated the adaptation of MAIs, such as EVA^{TM}, and how such innovations evolved as an integral part of the broader reform programmes unfolding in the Thai SOE sector.

3. Research Methods

To examine how regulators mediated the adaptation of EVA^{TM} in the Thai SOE sector and how this affected its use across individual enterprises, we collected data at multiple levels within this sector and combined a process-orientated research approach (Langley, 1999; Langley *et al*., 2013) with comparative case studies (Eisenhardt, 1989). A process-orientated approach, mapping the actions of a broad range of relevant actors, is necessary for enhancing our understanding of regulation as an evolving phenomenon and for exploring how adaptations unfold over time (Djelic and den Hond, 2014). However, to capture variations emerging from regulatees' responses to regulatory initiatives and to explore the organisation-specific adaptations of EVA^{TM} in some detail, we also conducted deeper case studies in two SOEs. Whilst comparative case studies may compromise some of the depth and richness associated with qualitative inquiries (Ahrens and Dent, 1998; Dyer and Wilkins, 1991), we

see it as a useful approach for building theory, concerning how and why adaptations are made, which may in turn inform large-scale diffusion studies (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). The choice of such an approach, as a way of furthering theory development, would also seem justifiable given the current lack of detailed understandings of how the mediating role of regulators affects the use of MAIs across regulatees (Edmondson and McManus, 2007). Following emerging calls for examining how industry-specific conditions affect management accounting practices (Messner, 2016), we initially approached four SOEs facing somewhat different regulatory environments as a result of variations in reforms and industry-specific regulations. Following initial interviews across all four SOEs, we chose to deepen the data collection in two of them (UtilityCo and BankCo[3]) as they seemed to face different challenges in adapting EVA™ to industry-specific conditions. However, data from one of the SOEs not included in our comparative case analysis (PTT Ltd) informed our analysis as it was one of the earliest adopters of EVA™ in the Thai SOE sector and has occupied an important role in advising other SOEs about how to implement and use it as a performance management system (see Chiwamit *et al.*, 2014).

Data collection primarily comprised semi-structured interviews and documents. Interviews were conducted with a broad range of actors involved in the dissemination and adaptation of EVA™ in the Thai SOE sector. Of particular importance were interviews with representatives of the key regulatory agency for Thai SOEs – the State Enterprise Policy Office (SEPO) – and independent consultants, such as Stern Stewart Thailand (SST) and Thai Rating and Information Services (TRIS), who worked in close collaboration with the SEPO. Within the two SOEs under deeper examination, we conducted interviews with senior executives, relevant staff specialists and a representative cross-section of middle managers across various business units. Most interviews were carried out on a one-to-one basis by the principal investigator (the first-named author), and key informants were interviewed on more than one occasion. In total, 87 interviews were conducted; the vast majority taking place between 2010 and 2012, whilst a small number of follow-up interviews were conducted in 2014 and 2016 (see Appendix for a list of interviewees). All but eight interviews were audio recorded and transcribed verbatim. Where recording was not possible, extensive notes were taken and transcribed into coherent summaries as soon as possible after each interview. The documents collected were of a public as well as proprietary nature, and primarily comprise various policy documents (e.g., feasibility studies, government regulations), consultants'

[3] The two SOEs under deeper examination have been anonymised.

reports and presentations, and such organisation-specific documents as annual reports, performance evaluation reports and planning documents, as well as documents pertaining to industry-specific regulation. Interview data and documents were complemented with the systematic maintenance of a research diary and occasional informal discussions with various informants to validate emerging interpretations and to delve further into specific issues.

Throughout the process of data collection, the data were continuously analysed by (1) mapping within-case regularities using both open-ended and more thematic coding and (2) searching for cross-case patterns and relating those patterns to more general developments within the Thai SOE sector (cf. Eisenhardt, 1989). Given the retrospective nature of much of our analysis, we combined these analytical procedures with systematic cross-checking of interview data and other data sources to address the risk of bias due to memory loss among our interviewees. This part of the analysis was facilitated by the involvement of the principal investigator as a consultant, employed by the SST, in several EVA™ implementation projects between 2005 and 2007. For the purpose of the present paper, we extended the analysis by examining the more specific roles of the SEPO in mediating the adaptations of EVA™ over time. In doing so, we adopted a temporal bracketing strategy (Langley, 1999) to identify distinct analytical phases in the process of adaptation and searched for evidence of regulatory dynamics, such as those depicted in Figure 1, across these phases. This formed a starting point for tracing the adaptations that unfolded on the supply-side, in relation to the evolving regulatory standards, as well as within the two SOEs under deeper analysis. The time period of the analysis extends primarily from 2001 to 2012 and is sub-divided into three distinct phases (see Table 1). The ensuing empirical account closely follows this temporal bracketing.

Insert Table 1 here!

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4. The Development of EVA™ in the Thai SOE Sector

4.1 The Introduction of EVA™ (2001-2006)

4.1.1 Reform context and the emergence of EVA™

The introduction of EVA™ in Thai SOEs emerged as an integral part of a longer sequence of governance reforms that started in the mid-1990s. In 1995, the Thai government implemented a performance management system known as the State Enterprise Performance Evaluation System (SEPES) as part of its fulfilment of the conditions of a financial aid package coordinated by the World Bank and the International Monetary Fund (see World Bank, 1994). The system entailed performance agreements and bonus programmes based on a range of financial and non-financial indicators devised to capture firm-specific characteristics of each SOE and was to be monitored and further developed by the SEPO on behalf of the Ministry of Finance. The World Bank also recommended the Thai government to launch a programme of privatisation and gradually transform its SOEs into more commercially orientated corporations. However, it was only after the election of Thaksin Shinawatra as Prime Minister in 2001 that more forceful privatisation efforts emerged and that EVA™ was adopted to facilitate this development. Following an invitation to Stern Stewart to visit Thailand in 2002, EVA™ began to be promoted as a system that would improve the efficiency of SOEs and render them more focused on delivering shareholder value, thereby enhancing their attractiveness to private investors. Close personal ties were established between the Prime Minister and a local businessman, who became the Chairman of Stern Stewart's newly formed Thai subsidiary (SST). In 2003, the SEPO was instructed to start developing EVA™ as a governance mechanism for SOEs and it subsequently commissioned SST to conduct a broadly based feasibility study in 35 SOEs and initiated deeper pilot projects in four of those enterprises (including UtilityCo). These initiatives finally informed the government decision to introduce EVA™ as a compulsory performance measure for 40 out of 58 SOEs in 2006.[4]

Similar to many Western countries (see e.g., Fiss and Zajac, 2004; Froud *et al*., 2000), EVA™ was introduced as an integral part of a reform programme which bore the imprint of the shareholder value movement. Consulting firms, such as Stern Stewart, have arguably been a key exponent of this movement (Froud *et al*., 2000) and, together with the Prime Minister, they took an active part in promoting EVA™ as a means of increasing the financial returns of SOEs (Chiwamit *et al*., 2014). The strong political support for the use of EVA™ emanating from the Prime Minister and his political associates, who in some cases made substantial gains from privatisation, persisted over the period leading up to its introduction as a compulsory performance measure for the majority of SOEs in 2006. As explained below,

[4] Only SOEs without significant commercial operations were to be exempt from using EVA™.

however, a number of adaptations, which effectively restricted the aggressive pursuit of shareholder value creation, were already initiated at this time due to the need to reconcile EVA™ with other emerging reform programmes and extant governance practices.

4.1.2 Supply-side adaptations

According to Stern Stewart, EVA™ should be seen as "the centrepiece of a completely integrated framework of financial management and incentive compensation" (Stern *et al*., 1995, pp. 45-46), which purports to improve the alignment of managerial interests with those of shareholders. To achieve this end, a number of changes to performance measurement and incentive systems, based on traditional financial measures such as accounting profits and return on investment, are suggested. Similar to the concept of residual income, EVA™ is calculated by adjusting accounting profits for the risk-adjusted cost of capital[5] to sensitise managers to the demands for long-term returns to shareholders. Moreover, EVA™ is ideally seen as a stand-alone system, replacing a broader range of often inconsistent and disconnected performance measures, and providing a powerful vehicle for decentralisation within organisations (see Stern *et al*., 1995, 2001). By disaggregating EVA™ across the corporate hierarchy and combining it with far-reaching delegation of decision-making rights, managers are allegedly empowered to manage assets and to make capital allocation decisions on the same basis as shareholders. Furthermore, Stern Stewart argues that, to incentivise managers to maximise shareholder value, bonuses should be based on the achievement of objective targets, preventing the creation of budgetary slack, and should, in principle, be unlimited and proportional to performance improvements (see Stern *et al*., 1995, 2001).

Although Stern Stewart originally planned to apply many of these attributes of the EVA™ system to Thai SOEs key regulators, such as the Ministry of Finance, were able to exercise considerable influence over it and sought to adapt it to extant governance practices at an early stage. The structuring of extant performance agreements for SOEs around a broad range of enterprise-specific financial and non-financial performance indicators presented a major

[5] EVA™ is generally calculated as Net Operating Profit after Taxes (NOPAT) minus a Capital Charge. Capital Charge = Capital Employed x Weighted Average Cost of Capital (WACC). WACC = (% equity x cost of equity) + (% debt x after-tax cost of debt). Cost of Equity = R_f + (β x Market Risk Premium), where R_f is the "risk-free" interest rate on long-term government bonds, β is firm- or industry-specific risk and Market Risk Premium is the return that a particular stock market yields above the average return on long-term government bonds.

obstacle to the use of EVA™ as a stand-alone system. Moreover, the Ministry of Finance did not share the Prime Minister's enthusiasm for maximising shareholder value and effectively supported a competing reform programme, pivoting on the promotion of the Balanced Scorecard as a more general template for performance management in the Thai public sector (see Sutheewasinnon *et al.*, 2016). At the time of Stern Stewart's arrival, several SOEs had adopted the Balanced Scorecard and the Minister of Finance reportedly saw this innovation as more compatible with the SEPES. This prompted Stern Stewart to adapt EVA™. Local SST staff went to considerable lengths to explain how EVA™ might complement, rather than compete with, the Balanced Scorecard. For instance, when presenting EVA™ to the Ministry of Finance, they pointed out that the suppliers of the Balanced Scorecard propose that EVA™ should be the primary financial metric in any balanced scorecard. Hence, rather than insisting on the use of EVA™ as a stand-alone system aimed at maximising shareholder value, SST effectively began promoting a more flexible version which gave the regulators a greater degree of choice in adapting it to the needs of SOEs. Yet, it was only after one of the SOEs, which had adopted the Balanced Scorecard, experienced a severe liquidity crisis in 2003 that the Minister of Finance was finally won over and the decision was taken to introduce EVA™ alongside the ongoing efforts to implement the Balanced Scorecard.

The introduction of EVA™ to the Thai SOE sector illustrates how the existence of two competing reform programmes, centred on different MAIs, can enable regulators to influence such innovations at an early stage of their diffusion. This contrasts with prior research on regulatory standards, which has mainly examined individual management innovations in isolation from each other, although the multiplicity of standards governing such innovations is occasionally recognised (see Djelic and den Hond, 2014; Rasche, 2010; Timmermans and Epstein, 2010). As explained below, the early supply-side adaptations of EVA™, preventing it from becoming a stand-alone system, had major implications for the SEPO's subsequent work on turning it into more specific regulatory standards.

4.1.3 Adaptations of regulatory standards

The feasibility study and the pilot projects that followed the decision to adopt EVA™ were carried out between 2003 and 2005 and prompted the SEPO to undertake significant adaptations of EVA™. Similar to the Ministry of Finance, the SEPO was not entirely aligned with the Prime Minister's ambition to increase shareholder value and was sensitive to the

emerging concerns of individual SOEs that this reform programme might jeopardise their achievement of broader political and social objectives and foster resistance from trade unitons. The feasibility study and pilot projects provided a channel through which individual SOEs could influence the development of regulatory standards and restrict the pursuit of shareholder value creation. For instance, the concerns raised by SOEs and their use of the Balanced Scorecard, together with the advice offered by SST, reinforced the SEPO's conviction that EVA™ needed to be used as part of a broader performance management system. One senior SEPO official recalled:

> The Balanced Scorecard concepts have long been adopted to formulate performance indicators for the performance agreements … Although we did not force SOEs to implement Balanced Scorecards, SOEs have gradually learned about the Balanced Scorecard. We did recognise the weaknesses of the two systems [i.e. EVA™ and the Balanced Scorecard]. Thus, when SST convinced us that EVA™ and the Balanced Scorecard would complement each other well, we decided to introduce them as a package. (Deputy Director, the SEPO, 10/11/2010)

These findings show how the enduring influence of two reform programmes, centred on different MAIs, on the development of regulatory standards restricted the possibilities to boost financial returns at the expense of other performance dimensions. The SEPO initially decided to give EVA™ a 15 per cent weight in the performance agreements of individual SOEs. However, despite the efforts of SOEs to influence emerging standards, some of our interviewees suggested that the weight attached to EVA™ was still relatively significant, as few other indicators carried a higher weight in their performance agreements.

The experiences of individual SOEs also influenced other key adaptations of the EVA™ system, such as the calculation of the cost of capital. Several of the SOEs participating in the feasibility study experienced significant difficulties in estimating the risk-adjusted weighted average cost of capital (i.e. WACC) due to a lack of long-term data on firm-specific risk (i.e., β) for shares traded on the Thai stock market. Furthermore, the difficulties were compounded by the fact that the vast majority of Thai SOEs were not publically traded and thus lacked information about their firm-specific risk relative to common market risk. This led the consultants advising the SEPO to recommend the use of a rather arbitrary measures of risk. The ex-country manager of SST overseeing the estimations of the WACC explained:

> Capital markets for emerging markets like Thailand are not stable and do not provide sufficient data for the WACC calculation. Thus, SST needed to use information from a New York University data base to calculate proxies for β, using peers within the same industry. In addition, to eliminate any short-term fluctuations in determining the market risk premium, which requires long-term data on the premium the market is willing to pay, SST used a country risk premium and added a global market risk premium where sufficient long term data were available. (Ex-Country Manager, SST, 29/12/2010)

Given the considerable difficulties in calculating the WACC, the SEPO has since refrained from undertaking major changes in the industry-specific measures of cost of capital devised for individual SOEs. One of our interviewees explained:

> The SEPO decided to standardise the WACC calculation by announcing key parameters for each industry. Although the SEPO updates such parameters every year, the values are quite stable. So, now, we have relatively fixed charges for capital. […] The quantitative measurement of EVA™ is not very different to analysing budget variances. Increases in EVA™ mainly come from net profit, as WACC is frozen. (Vice Director, TRIS, 17/01/2011)

These adaptations of EVA™ effectively restricted the pressures on SOEs to produce continuous improvements in shareholder value. Capital charges have not been used as a means of compelling SOEs to deliver year-on-year growth in financial returns. Due to the difficulties in estimating costs of capital for particular industry segments, SOEs have also been granted a degree of choice in the use of costs of capital. They can either use enterprise-wide WACC rates across their entire organisations or differentiate these rates for individual business units if they deem it meaningful.

In addition to the immediate concerns and experiences of individual SOEs, the SEPO had to adapt EVA™ to extant regulations of remuneration practices in a manner which further restricted the Prime Minister's pursuit of shareholder value creation. From the very outset, the use of unlimited bonus plans to boost financial returns was infeasible because of the long-standing government regulation which restricted the annual bonuses of SOE managers to a maximum of eight months' salary. Following the incorporation of EVA™ into the SEPES, bonuses were based on the overall achievement of a broad range of performance targets, rather than being exclusively based on financial performance improvements. As a result, the

achievement of EVA™ targets has a relatively limited impact on pay. The SEPO also relaxed the pressures to base bonuses on EVA™ by making their use compulsory only for Chief Executive Officers (CEOs), although it did encourage SOEs to extend such plans to lower levels where appropriate. These relatively limited changes in remuneration practices were also influenced by the SEPO's sensitivity to cultural characteristics of the SOEs and, especially, the Thai culture of *Krengjai*[6], which are averse to the aggressive pursuit of shareholder value creation. The notion of *Krengjai* is intimately associated with the pronounced reluctance of Thai managers to penalise employees, as this would violate the culture of saving face. This has limited SOEs' propensity to use aggressive incentive plans based on rigorously enforced performance targets. Some interviewees also emphasised that the cultural barriers to the use of EVA™ were reinforced by the rather routine, conservative and relaxed work environment ingrained in many SOEs. A policy advisor closely affiliated with the SEPO summarised the consequences of such barriers for SOEs' adaptation of incentive systems:

> We do not want to be too aggressive about internal incentive plans because they can lead to conflicts among individual units. Since SOEs were established, profitable SOEs have received a fixed bonus pool equal to nine per cent of profit, but not more than five months' salary. We changed to paying different corporate bonuses based on nine levels of performance in 1995. But SOE staff still believe that bonuses are part of the salaries that they must receive, and most managers dare not change it. Until now, although management has a right to apportion employees' bonuses based on their individual performance, as far as I know only two SOEs do that. … Thus, we try not to deviate much from the existing bonus system. (Senior Executive and Fiscal Advisor, Ministry of Finance, 12/10/2010)

Consistent with prior research on regulatory standards (e.g., Alon and Dwyer, 2016; Bozanic *et al*., 2012; Mehrpouya and Samiolo, 2016), the initial development of such standards for EVA™ thus entailed significant adaptations which were partly influenced by the emerging concerns and experiences of SOEs. This imbued the regulatory standards with a mix of restrictions and choices. Some attributes were mandatory, such as the need to give EVA™ a particular weight in performance agreements, but SOEs were allowed discretion in the calculation of the WACC and in the use of EVA™ as part of their incentive plans. Whilst

[6] The notion of Krengjai generally implies thinking about others' feelings, being very considerate and disinclined to offend or disturb (Thanasankit and Corbitt, 2002).

these adaptations did not eliminate the possibilities for SOEs to increase financial returns, they diverted attention from the reform programme endorsed by Prime Minister. However, despite the enduring influence of other reform programmes, such as the one centred on the Balanced Scorecard, the SEPO was still under considerable political pressure to align SOEs with the Prime Minister's pursuit of shareholder value. At the time EVA™ became a compulsory requirement for Thai SOEs, the SEPO planned to gradually increase the weight of EVA™ in performance agreements and to implement objective target-setting procedures aimed at continuous performance improvement. Furthermore, it required SOEs to establish relatively independent EVA™ centres below the corporate level as a means of decentralising financial decision-making. As explained below, however, the pressures on SOE to increase financial returns were further reduced as EVA™ underwent further adaptations over the following years.

4.2 Compulsory Use and Further Adaptations of EVA™ (2006-2010)

4.2.1 Unfolding reform context

The decision to make the adoption of EVA™ a compulsory requirement for the majority of Thai SOEs coincided with a period of growing political turbulence, which culminated in the military's ousting of the Shinawatra government in a 'bloodless coup' in September 2006. The popular protests against the Government were partly fuelled by corruption charges linked to the Government's far-reaching plans to privatise SOEs and concerns that the privatisation of SOEs would erode public service levels. Trade unions also feared job losses. Their resistance to privatisation was particularly strong in one of our case organisations (UtilityCo), which led to a court decision that blocked further privatisation initiatives. Hence, by the time the Shinawatra government was ousted only six SOEs had been part-privatised and listed on the Thai stock exchange. Following these developments, the reform programme aimed at transforming SOEs into more shareholder-focused entities lost much of its momentum and the majority of the SOEs have maintained their status as wholly state-owned entities.

Regardless of these developments, work on developing the EVA™ system as a compulsory requirement for the majority of SOEs continued under the auspices of the SEPO. According to our interviewees, important reasons for this were that the SEPO saw the system as useful for enhancing the efficiency of SOEs and that it would be difficult to reverse the political

decision to use it as a compulsory governance mechanism. The work on developing the EVA™ system was largely completed between 2006 and 2009 and initially saw the SEPO collaborating closely with SST and other consulting firms. A range of initiatives, devised to help SOEs resolve emerging problems and to provide opportunities for ongoing consultation (e.g., through weekly workshops, the establishment of an EVA™ call centre and a project called 'the EVA™ clinic'), resulted from this work. However, over time the SEPO reduced its dependence on consultants and started to rely more heavily on early adopters of EVA™, such as PTT[7], to share its experiences with other SOEs and to develop the system in close collaboration with individual enterprises. Enterprises which were particularly important for the country's economic development, such as UtilityCo, were singled out for special assistance aimed at resolving implementation problems. As explained below, this collaborative approach enabled the SOEs to exercise considerable influence on the continued adaptation of the regulatory standards governing the use of EVA™.

4.2.2 Adaptations of regulatory standards

Through the various consultation fora set up to facilitate the implementation of EVA™, the SEPO became sensitised to emerging problems and aware of requests from SOEs to make further adaptations to the system. Several SOEs continued to raise concerns that excessive reliance on financial performance indicators, such as EVA™, might jeopardise their broader political and social objectives as providers of public utilities and services. At the same time, the demise of the Shinawatra government reduced the political pressures on the SEPO to increase the weight attached to EVA™ to increase shareholder value. Although the SEPO was still interested in finding ways of enhancing the efficiency of SOEs, it continued to share the concerns of many SOEs that excessive pressure for financial returns might jeopardise wider stakeholder interests. Hence, over the period 2006-09, the SEPO reduced the weight attached to EVA™ in the performance agreements from 15 to around 10 per cent. A senior SEPO official described the backdrop to this reduced weight as follows:

> We did not increase the weight of EVA™ as initially expected because we found that the EVA™ figures are not really reflecting true economic value. … We reduced the weight given to EVA™ because we think that we have closely monitored the important stages of EVA™ implementation, which required a

[7] PTT was the only SOE which adopted EVA™ on a voluntary basis before SST was commissioned to assess its feasibility on a large scale in the Thai SOE sector.

> significant weight. Now, the EVA™ system has been deployed to operational units lower down the organisation, which is very difficult to evaluate correctly and fairly. (Head of SOE Performance Evaluation Division, the SEPO, 11/10/2010)

This quote suggests that the decision to reduce the weight attached to EVA™ in performance agreements, and thereby alleviate the pressures on SOEs to prioritise financial returns, was partly prompted by the problems experienced by many SOEs in using EVA™ at lower organisational levels. As the implementation of EVA™ progressed, several SOEs (including UtilityCo) raised concerns about the possibilities of establishing independent EVA™ centres, due to the complex interdependencies between organisational sub-units and the consequent need for centralised coordination. Our interviewees indicated that this often gave rise to highly arbitrary allocation practices which reduced the informativeness of EVA™ metrics. For instance, a senior SEPO official explained:

> Sub-unit EVA™ calculation is disputable because many SOEs have an integrated organisational structure, which makes it very difficult and problematic to accurately allocate costs and revenues to their sub-units. In addition, many of them do not have a suitable information system and a sufficient database to enable them to do that. So, now it is like we have put the EVA™ concepts, approach and template in place for them, but what we are not sure of is the accuracy of the information they use in calculating sub-unit EVA™. (Deputy Director, the SEPO, 10/11/2010)

In addition to the problems caused by interdependencies within individual SOEs, the ability of SOEs to decentralise capital investment decisions was constrained by strict political regulations preventing them from flexibly using assets as a means of increasing EVA™ performance and thereby jeopardising public assets and service levels. Hence, the barriers to using independent EVA™ centres to decentralise financial decision-making were not only due to resistance from individual SOEs, but also to extant regulatory restrictions. In response to such problems, the SEPO eventually settled for the requirement that SOEs have to establish EVA™ centres at the business unit level immediately below the corporate level, although they can also opt to apply it at lower levels if they deem it appropriate. This represents a relaxation of regulatory standards, and gives SOEs a greater degree of choice, compared to the initial plans to use independent EVA™ centres relatively extensively throughout SOEs as a means of facilitating decentralisation.

Emerging objections from SOEs also prompted adaptations of the target-setting practices associated with EVA™. Although SST originally advised the SEPO to replace the use of negotiated budgetary targets with more objective targets to stimulate continuous improvements, these plans had to be abandoned due to widespread complaints from SOEs that such practices were difficult to reconcile with extant regulations. Both UtilityCo and BankCo raised such concerns and a senior SEPO official recalled how this had led to further adaptations:

> We got a lot of complaints from SOEs about continuous improvement targets. Many SOEs disliked the EVA™ system because they felt that this ambitious continuous improvement goal does not match their missions. After we reconsidered this, we started to recognise that the continuous improvement target is not quite appropriate for most SOEs because their ultimate goals are not to maximise financial value, and the operations of some SOEs are regulated. Therefore, we decided to change our approach to setting EVA™ targets based on SOEs' business plans as well as budgets. (Head of SOE Performance Evaluation Division, the SEPO, 02/08/2011)

However, whilst the maintenance of negotiated targets was considered necessary to enhance SOEs' acceptance of the EVA™ system, it reportedly resulted in the majority of SOEs finding EVA™ targets to be rather easily achievable. Hence, this adaptation further detracted from the reform programme set in motion by Prime Minister Shinawatrs.

The discussion above suggests that through their continued consultations with the SEPO SOEs were able to exercise considerable influence over the unfolding development of regulatory standards. This collaborative approach to standard-setting led to further adaptations of EVA™ whereby a balance was maintained between the choices and restrictions embedded in the standards. Some attributes, such as the need to give EVA™ a particular weight in performance agreements and for SOEs to disaggregate EVA™ to the business unit level, remained mandatory, whilst SOEs were given greater discretion as to how far down the hierarchy to use the system. Whilst these findings are, again, consistent with the literature on regulation informing this paper (e.g., Alon and Dwyer, 2016; Bozanic *et al*., 2012; Mehrpouya and Samiolo, 2016), individual SOEs differed significantly in the extent to which they took advantage of the choices embedded in the regulatory standards due to variations in industry-specific regulations and cultural characteristics.

4.2.3 Organisation-specific adaptations among regulatees

4.2.3.1 UtilityCo

UtilityCo is one of three SOEs in the Thai electricity industry and it occupies the dominant position as the largest power generator in the country and it controls the distribution of electricity. It is the sole buyer of electricity from private sector generators and it transmits this electricity to the two other SOEs which function as retailers on a nation-wide basis. Under the plans of the Shinawatra government to privatise the company in the early 2000s, UtilityCo was required to account separately for its generation and transmission activities, as the former was the initial target for stock-market listing. Operations were subsequently organised into four operating business units (Fuel, Generation, Transmission and Development) and six support business units, which are all treated as EVA™ centres. The EVA™ system was first introduced into UtilityCo in 2003, as the company was selected by SST to take part in the initial feasibility study, and it was subsequently implemented from 2005 to support the Government's privatisation plans. At that stage, UtilityCo's management reportedly intended to use EVA™ quite extensively and it expected to reap considerable benefits from doing so:

> The privatisation of UtilityCo was expected to bring a more efficient and competitive electricity market. Although the privatisation would directly impact the Generation Unit, other units would inevitably be forced to increase efficiency. … To operate in this challenging environment, better measures of sub-unit performance are crucial. … Many of our executives believed that the EVA™ system would direct management decisions towards value creation, realistically planning power plants' performance, measuring efficiency as well as effectiveness of power plants, and eventually offering a more challenging incentive scheme. (Deputy Governor, Accounting and Finance Business Unit, 08/12/2010)

However, the relatively ambitious plans to implement the EVA™ system were scaled back considerably in the wake of the court decision which blocked the privatisation of UtilityCo in 2006. Even though the use of EVA™ became a compulsory requirement around the same time, UtilityCo refrained from extending its use below the business-unit level, except in the Generation Unit, where EVA™ was disaggregated to individual power plants. As noted above, UtilityCo was one of the SOEs that raised concerns, in the ongoing consultations with the SEPO, about the problems of disaggregating EVA™ due to the difficulties of establishing

independent EVA™ centres at lower organisational levels and also about the use of continuous improvement performance targets. A centrally positioned manager in UitlityCo described how these consultations influenced the regulatory standards devised by the SEPO:

> We consistently argued that an EVA™ benchmark, set as a percentage increase from the previous year, is not applicable for UtilityCo. … the SEPO did understand, and suggested we set an EVA™ target based on budgets. In my opinion, this budget based approach is not very useful. However, I think that the SEPO wanted to apply the same approach across SOEs. … Eventually, most SOEs adopted the budget based approach. (Deputy Governor, Policy and Planning Business Unit, 09/12/2010)

Similar to the experiences of many other SOEs, the reduced emphasis on financial returns that followed from these adaptations of regulatory standards was seen as being consistent with the wider social and political objectives of UtilityCo and, also, with the technical, engineering-based mind set dominating the organisation. One of our interviewees explained:

> The key success factors of power plants are. ... First is the technical capacity and efficiency of plants and machines, which will affect our 'heat rate'. Second is the 'availability' of the plants and machines, which will impact the quantity of electricity generation. Third is the international working standards and safety. Fourth is the efficient use of resources, which concern revenues, costs and efficient use of assets. … The last one is quite similar to EVA™. However, technicians like us are not so familiar with a concept such as cost of capital, and we cannot control it. (Deputy Director, South Bangkok Power Plant, Generation Business Unit, 06/12/2010).

There were also indications that industry-specific regulations restricted the extent to which UtilityCo was able to adapt the EVA™ system to make it useful for performance management. In particular, the external regulation of electricity tariffs has an important influence on UtilityCo's revenue streams and has far-reaching implications for the use of capital charges as a means of enhancing financial returns. These tariffs contain a variable element and a regulated fixed element, where the latter is based on the estimated revenue requirements of UtilityCo and the two retail SOEs. These estimated revenue requirements are fixed for the entire regulatory period and consist of two parts; one part is based on estimated operating costs adjusted for increases in the consumer price index minus a factor intended to incentivise SOEs to improve operating efficiency and the other part is based on the revenues

required to generate a specific return on investment (ROI). However, the ROI rates have been lower than the cost of capital typically used to calculate EVA™ in UtilityCo and its managers reportedly used this as an 'excuse' for negative EVA™ performance. At the business unit level, this problem was exacerbated by the transfer prices used to determine the revenues of the six support units. These transfer prices were based on a formula similar to that used by the energy regulator to calculate estimated revenue requirements and was closely linked to the ROI used by the regulator. Although UtilityCo has gone beyond the SEPO's minimum requirements, by using differentiated WACCs across the business units, this does not seem to have resolved this problem or increased the pressure on managers to improve financial returns. Furthermore, managers indicated that they had very little opportunity to improve their EVA™ by managing the assets more effectively, as most asset utilisation decisions were subject to various forms of regulation. One of them explained:

> The Ministry of Finance wants us to improve efficiency and EVA™, but it does not relax regulations to enable us to do so. Now, we have a limited right to manage our assets. For example, although we have a lot of cash, our CFO cannot use it to invest in highly profitable shares. Actually, we cannot do almost anything that may be risky. Even for unused assets, we cannot independently sell public assets for commercial purposes. If we want to get rid of them to avoid the capital charge, it may be easier to donate them. (Chief, Corporate Planning Division, Policy and Planning Business Unit, 21/10/2010)

Regulatory restrictions have also discouraged UtilityCo's senior management from extensively using the EVA™ system to incentivise staff. Some of our interviewees pointed to the perceived unfairness of such practices as regulatory constraints severely circumscribe the controllability of financial performance. This perceived unfairness was reinforced by cultural characteristics arising from the professional background of the staff. Most of the staff have an engineering-based background, and inevitably emphasised technical rather than financial aspects of performance, and this reportedly reduced their appreciation of EVA™. There was evidence that this engineering-based mind set, coupled with the quite relaxed working environment and the culture of *Krengjai*, led to the emphasis being placed on collegial bonds (widely referred to as 'brother-sister relationships'), rather than the aggressive pursuit of individual performance. One of our interviewees explained:

> Actually our brother-sister relationship, easy-going working style and blunt incentive plan are not that bad, and seem to be suitable for UtilityCo. The brother-

> sister relationship facilitates cooperation, as it reduces unnecessary official working processes. For example, now I can ask people in other departments to do some extra work for me by simply calling their supervisors. If we do not have these close social relationships, we might need a lot more time to go through very long official processes. In addition, non-competitive working environment also provides a good chance for smart people to show their capability with support and assistance from their co-workers. We do not need to waste time competing with each other in order to get a higher bonus. (Economist Level 10, Office of the Governor Business Unit, 18/08/2011)

Given these cultural characteristics, the management of UtilityCo has refrained from going beyond the SEPO's minimum requirement to link EVA™ performance only to the bonuses of the CEO and has retained the use of bonuses based on corporate (rather than individual) performance for all other employees.

To summarise, the findings from UtilityCo emphasise the crucial role played, within this SOE, by the ongoing adaptations of the EVA™ system which emerged from the consultations between the SEPO and individual SOEs. The development of EVA™ in UtilityCo largely mirrors the more general development of the system within the Thai SOE sector, in that the initially far-reaching plans to introduce EVA™ to facilitate privatisation eventually gave way to less ambitious efforts to use it to increase financial returns. With the exception of the use of the cost of capital, UtilityCo did not go very far beyond the minimum requirements embedded in the evolving regulatory standards governing the use of EVA™. As will be explained below, however, the choices embedded in these standards have enabled other SOEs, with different regulatory and cultural characteristics, to place a greater emphasis on financial returns.

4.2.3.2 BankCo

BankCo is one of the largest commercial banks in Thailand and was fully state-owned until 1989, when some of its shares were floated on the Thai stock exchange. In 2010, the state's ownership stake was 55 per cent. From 2004, the BankCo also embarked on an ambitious programme of strategic re-positioning aimed at transforming itself from an allegedly conservative and bureaucratic state institution to a more customer-focused and commercially minded organisation. BankCo also began the development of a more sophisticated

performance management system for evaluating its sub-units. According to BankCo's management, the adoption of EVA™ as a compulsory governance mechanism in 2006 was an important extension of this system supporting its strategic re-orientation:

> We would like to thank the SEPO for their policy to implement EVA™ as it acted like a catalyst for full implementation of a sub-unit performance measurement system. We started to develop the system almost four years before the policy, but it was not successful. We needed some kind of coercive pressures from the outside to facilitate the change. We were lucky that the EVA™ system fits our management's interests very well. (Director, Management Information Division, Financial Management Group, 29/09/2010)

In addition, the EVA™ system was seen to be consistent with the broader reforms within the financial services industry which were unfolding under the influence of international regulatory initiatives, such as Basel II, as they both reinforced the emphasis on systematic risk management. Following the steps taken by the Bank of Thailand to comply with Basel II, some industry-specific requirements concerning the use of performance metrics which are similar to EVA™ were introduced between 2004 and 2009. For instance, BankCo was required to use a Risk Adjusted Return on Capital (RAROC)[8] to evaluate its lending and investments. Following the advice of the Bank of Thailand, BankCo incorporated this measure into its system for allocating risk-adjusted capital to its sub-units. This facilitated the use of EVA™ at lower organisational levels. In contrast the difficulties of harmonising the calculation of EVA™ with industry-specific regulations in UtilityCo, BankCo's use of EVA™ is much more consistent with its industry-specific regulations. BankCo applies a corporate-wide WACC of about 11 per cent in calculating both corporate and sub-unit EVA™. On the face of it, this does not yield capital charges which reflect the different levels of risk in the individual sub-units. However, the use of RAROC for allocating capital to sub-units partly compensates for this and, according to our interviewees, reinforces the awareness of risk-adjusted costs of capital in a way that is consistent with the use of EVA™. A manager directly involved in risk management remarked:

> We have been using RAROC for risk management within the bank for several years as it is a normal practice within the banking industry. ... For me, RAROC and EVA™ provide the same information. The only difference is that RAROC

[8] Defined as the ratio of risk-adjusted returns to risk-adjusted capital.

> represents the percentage of economic profit over economic capital, while EVA™ represents the magnitude of economic profit. (Senior Director, Risk Management Group, 09/11/2010)

He continued by elaborating on the efforts made within BankCo to make the use of RAROC compatible with EVA™:

> Since 2008, the Bank of Thailand has required all financial institutions in Thailand to implement Basel II under either a standardised approach (the basic level) or an internal-rating based approach (the more sophisticated one). … Actually, we [the Risk Management Group] are using an internal-rating based approach in calculating RAROC. … But the EVA™ team attempted to simplify our approach because EVA™ is to be used by all divisions throughout the bank. Thus, the team uses the standardised approach in allocating invested capital for the purpose of EVA™ calculation. (Senior Director, Risk Management Group, 09/11/2010)

These efforts to make EVA™ an integral part of performance management practices seem to have enhanced BankCo's employees' acceptance of the system. In contrast to UtilityCo, there were few indications of resistance to the use EVA™ as a means of decentralising financial decisions. Even though the possibility of making such decisions on a strictly financial basis can occasionally be constrained by other regulatory requirements, such as the requirement to maintain service levels in remote rural areas, EVA™ is an integral part of capital investment making, as one of our interviewees explained:

> We are using EVA™ to support decision making in many ways. For example, we set the criterion that any new branch must have a positive EVA™ within three years. … Thus, before opening a new branch, a detailed feasibility study, including a five-year EVA™ forecast, will be evaluated. … After the branch is opened, we will consistently track its EVA™ every six months for at least five years. (Director, Management Information Division, Financial Management Group, 29/09/2010)

In contrast to UtilityCo, BankCo has made far-reaching efforts to develop a responsibility accounting and transfer pricing system, called the Profitability System, to facilitate the disaggregation of EVA™. Under the Profitability System, all front-office functions were initially treated as profit centres, whilst middle- and back-office functions were cost centres.

However, this changed after the introduction of EVA™ and now all functions are profit centres. This provided a stepping stone for the use of EVA™ as a performance metric at the business unit[9] level, as well as at the lower departmental and divisional levels within business units. To facilitate this arrangement and to coordinate the interdependencies between the various functions, a transfer pricing system was established, using so-called 'internal service charges', based on external market prices, where available, or the time spent delivering the services. This transfer pricing system has enabled BankCo to go considerably beyond the minimum requirements of the SEPO by establishing EVA™ centres below the business unit level across the entire organisation and use the system to enhance a sense of profit consciousness throughout the organisation. However, consistent with the regulatory standards established by the SEPO, EVA™ initially carried only a small weight in the performance agreements for the various sub-units. As noted above, BankCo was also one of the SOEs that objected to the SEPO's initial use of EVA™ targets aimed at continuous improvement. BankCo saw such targets as incompatible with the external regulation of the financial services industry, or as one of our interviewees explained:

> Our operations are influenced by several external factors that we cannot control. For instance, the Bank of Thailand just changed its regulations on fee income, and this strongly impacts our operations. … Interest rates are changing every day. … It is not appropriate for us to set EVA™ targets based on performance in the previous year. (Senior Director, Planning and Budgeting Division, Financial Management Group, 24/11/2010)

According to our interviewees, the abandonment of continuous improvement targets reinforced the acceptance of EVA™ targets at lower levels. However, similar to many other SOEs, the interviewees indicated that this has tended to render targets easily achievable:

> EVA™ targets based on our budgets and forecasts are easily achievable. No one will set too challenging targets. It is quite impossible for the Planning and Budgeting Division, which is responsible for monitoring budget targets, to know how reasonable our targets are compared to what we do. (Senior Director, Credit Operation Division, Operation Group, 16/08/2011)

Nevertheless, BankCo's management has been reluctant to relax performance pressures too much and has sought to reinforce the focus on EVA™ at lower organisational levels through

[9] The term 'Group' is typically used within BankCo for its business units.

its incentive system. BankCo is one of the relatively few SOEs that have gone beyond the SEPO's minimum requirement and linked bonuses to EVA™ below the CEO level. This was possible because of cultural characteristics rooted in the professional background of the bank's staff. In contrast to UiltityCo, our interviewees in BankCo indicated that their educational background and extensive professional experience in the financial sector made it easier for them to understand and accept financial concepts such as EVA™. Even though BankCo's bonus programme is subject to the same regulatory restrictions as other SOEs, it has been able to implement bonuses based on individual performance linked to EVA™ down to the divisional level. This seems to have encountered little resistance, as one of our interviewees explained:

> We tried not to make staff dislike the system, especially since the beginning. … Thus, we started to integrate sub-unit EVA™ results into the incentive system by incorporating it as one of the performance indicators with only 5 per cent weight. Then after our staff became used to EVA™ and had more confidence in the system, the weight was increased to 10 per cent. This gradual change, along with the EVA™ targets that are consistent with their budgets and business plans, did not create resistance. (Senior Executive Vice President, Financial Management Group and Risk Management Group, 11/01/2011)

The acceptance of EVA™ incentives has also been facilitated by the hiring of a new, younger generation of staff, who possess a stronger (and often international) educational background and often have private sector experience, as an integral part of the strategy of turning BankCo into a more commercially orientated organisation. Some of our interviewees suggested that this new generation is more accustomed to financial concepts and incentives than their older peers. Hence, the implementation of EVA™ was not only facilitated by BankCo's cultural characteristics, but also formed an integral part of the process of cultural change supporting its strategic re-orientation.

To summarise, our findings show that industry-specific regulations and cultural characteristics, which deviate somewhat from those traditionally dominating Thai SOEs, have enabled BankCo to take advantage of the choices embedded in the regulatory standards for EVA™ to support its process of strategic re-orientation. As explained below, these efforts to adapt EVA™ and go considerably beyond the SEPO's minimum requirements have continued despite unfolding governance reforms which have effectively relaxed the regulatory pressures on Thai SOEs to use EVA™ for performance management.

4.3 Adaptation of EVA™ to the State Enterprise Performance Appraisal System (2010-2012)

4.3.1 Unfolding reform context and supply-side adaptations

Since 2010, EVA™ has undergone further adaptations as the SEPO has gradually replaced the SEPES with a new performance management system – the State Enterprise Performance Appraisal System (SEPAS). Similar to the initial introduction of EVA™, this meant that the system had to be adapted to yet another reform programme inspired by a rather different innovation. The SEPAS drew heavily on well-established Total Quality Management (TQM) practices, such as the Malcolm Baldridge National Quality Award (MBNQA), which had begun to diffuse to private sector companies in Thailand in the early 2000s (Wipulanusat *et al*., 2015). Following the demise of the Shinawatra government, the MBNQA was also adopted as a way of improving the managerial processes within public sector organisations (Sutheewasinnon *et al*., 2016). Although the SEPO had little direct influence on this broader reform programme, it started to align its performance management practices with this programme. In 2010, the SEPAS was officially introduced as a compulsory standard for SOEs. At the time of our study, the SEPAS was being implemented in five SOEs (including UtilityCo) and it has since been more or less fully applied by all SOEs (Wipulanusat *et al*., 2015).

Similar to most TQM practices, the performance management ethos embedded in the SEPAS has a strong process focus, which has often been seen as antithetical to results-orientated innovations such as the Balanced Scorecard and EVA™ (see Modell, 2009). The system relies more heavily on organisational self-assessment of improvements in operating processes and managerial decision-making than on the quantifiable performance targets established by the SEPO. However, the SEPO never intended the SEPAS to replace the use of EVA™. One SEPO official explained:

> Now we have shifted our focus from the EVA™ project to the SEPAS. We will not abandon the EVA™ system. However, we think that the SEPAS can address some weaknesses in the existing system. In addition, we believe that SOEs are now familiar with the EVA™ system. The six years that we spent on developing EVA™ should be enough. The next step in EVA™ is integrating it into the SEPAS. SOEs can choose

> how they want to utilise the EVA™ system to achieve their missions. (Head of SOE Performance Evaluation Division, the SEPO, 11/10/2010)

As this quote suggests, an important ambition behind the SEPAS was to imbue regulatory standards with a greater degree of choice on the part of SOEs. As explained below, this has had important implications for the continued development of EVA™ in the Thai SOE sector.

4.3.2 Adaptations of regulatory standards

Insofar as EVA™ is concerned, the most significant changes in regulatory standards pertained to the weight given to EVA™ in the performance agreements and to the way the SEPO assesses whether SOEs have met EVA™ targets. Following the introduction of the SEPAS, SOEs no longer have to give any specific weight to EVA™, although they are still required to use EVA™ at lower organisational levels, and the SEPO has shifted its emphasis towards more qualitative evaluations of SOEs work on developing their EVA™ system. Although these changes are partly attributable to the broader reform programme unfolding in the Thai public sector, they were also influenced by the continued complaints about the problems experienced by many SOEs in using EVA™ at lower organisational levels. Summarising the way the process-orientated performance management practices embedded in the SEPAS could alleviate these problems and facilitate the use of EVA™, one SEPO official explained:

> I think that the key benefits from implementing EVA™ come from the learning process rather than the EVA™ numbers. For example, improved analytical skills as well as slight changes in mind set are more useful, and they are more under control of the staff than their final quantitative results. (Head of SOE Performance Evaluation Division, the SEPO, 11/10/2010)

Moreover, some of our interviewees indicated that the transition from a results-orientated to a process-orientated approach to performance evaluation was more consistent with the cultural characteristics of many SOEs, as the latter approach effectively reduces performance pressures on staff. However, following the SEPO's ambition to grant SOEs a greater degree of choice in complying with regulatory standards, individual SOEs are still allowed to retain elements of a results-orientated approach in their internal performance management practices.

As explained below, this has enabled SOEs to continue to adapt the EVA™ system to their specific needs.

4.3.3 Organisation-specific adaptations among regulatees

4.3.3.1 UtilityCo

UtilityCo was one of the SOEs that influenced the SEPO's decision to implement the SEPAS, as it continued to raise concerns about the problems of using EVA™ at lower organisational levels. These concerns were highlighted in 2009 when the SEPO initiated a project in UtilityCo to resolve problems related to its transfer pricing system. Although this project did not produce any significant changes in transfer pricing practices, it alerted the SEPO to the risk that collaboration between operating units could be jeopardised if too much emphasis was placed on EVA™ results. In 2011, UtilityCo was selected as one of the first SOEs to implement the SEPAS and it has since been evaluated in accordance with the regulatory standards laid down in this system. The process-orientated approach to performance management has also been implemented throughout the organisation. According to our interviewees, this has effectively eliminated much of the emphasis placed on EVA™ at lower organisational levels. EVA™ targets are only used for evaluating the performance of the CEO. However, it was suggested that the CEO had tried to exert even stronger influence on regulatory standards by requesting that EVA™ should be removed from UtilityCo's performance agreement. Hence, insofar as EVA™ is concerned, UtilityCo has continued to comply only with the minimum requirements laid down in the SEPO's regulatory standards. Several of our interviewees expressed their satisfaction with this approach and claimed that the reduced emphasis on EVA™ was more consistent with the engineering-based mind set that has long permeated UtilityCo.

4.3.3.2 BankCo

In contrast to UtilityCo, BankCo's management lamented the changes in regulatory standards and they expressed concern that the shift towards a process-orientated approach to performance management was likely to reduce the impetus behind their efforts to use EVA™ to support the bank's strategic re-orientation. One of our interviewees explained:

> I do not understand why the SEPO moves away from an advanced management innovation like EVA™, back to the broad and old fashioned concepts of the SEPAS. In addition, I think that the EVA™ system can be improved a lot more than now if the SEPO continues to push the EVA™ project. … Therefore, I think it is too soon to introduce new concepts like the SEPAS, and this will lessen resources and efforts that could be spent on improving the EVA™ system. (Senior Executive Vice President, Financial Management Group and Risk Management Group, BankCo, 11/01/2011)

However, BankCo has taken advantage of the choices embedded in the SEPAS and the new regulatory standards have not restricted its pursuit of a more results-orientated approach to performance management at lower organisational levels. In 2011, the use of EVA™ was extended to specific products and customers in order to reinforce the focus on the returns generated by different customer segments. Since the appointment of a new CEO in 2012, BankCo has used EVA™ more aggressively for target-setting and incentivisation. The new CEO was dissatisfied with BankCo's financial performance and replaced the use of budget-based EVA™ targets, for determining the size of the bonus pool, with targets based on the previous year's performance and benchmarks derived from comparisons with other banks. This has enhanced the pressures on staff to increase year-on-year returns. The CEO also increased the weight attached to EVA™ in the bonus plans for managers at lower organisational levels, and started to widen the pay gap between high-performing and low-performing managers and also to differentiate the EVA™ targets and bonuses used for managers with more or less challenging jobs. These changes were combined with further efforts to hire younger managers with private sector experience in order to reduce cultural barriers to change. Our interviews in 2014 and 2016 indicated that the emphasis on EVA™ had persisted. Thus, the changes in regulatory standards evolving under the SEPAS seem to have imposed relatively few restrictions on BankCo's ability to adapt the EVA™ system to its organisation-specific needs.

5. Concluding Discussion

This paper has responded to recent calls for more research into how MAIs interact with regulatory processes (Modell, 2012b, 2014; Van der Stede, 2011; Wagenhofer, 2016) by studying how regulators mediate the adaptation of such innovations and how this mediation affects their use across the different regulatees. Using a framework derived from sociological

research, which sees regulation as an evolving and collaborative process, we have examined how a 'global' innovation, namely EVA™, has been adapted to the regulatory environment of Thai SOEs. Various regulators, such as the Ministry of Finance and the SEPO, played an important mediating role in this process and were able to both influence the supply of EVA™ at an early stage of its diffusion and then adapt the regulatory standards governing its use in response to the concerns and experiences emerging from individual SOEs. This enabled the regulatees to have a considerable influence on the regulatory standards throughout the diffusion process and contributed to imbuing those standards with a mix of choices and restrictions, which facilitated the further adaptation of EVA™ to their organisation-specific needs. These observations are consistent with the literature on regulation informing this study, which suggests that a collaborative approach to regulation facilitates compliance with regulatory standards (e.g., Bozanic *et al*., 2012; Brunsson and Jacobsson, 2000; Djelic and Sahlin, 2009). However, our findings also extend this literature in two distinct, yet inter-related, ways.

First, our findings show that regulatory standards do not necessarily evolve as an integral part of one coherent reform programme. Even though the diffusion of MAIs can be seen as an essential part of broader neo-liberal reform programmes aimed at 'modernising' the public sector (Jackson and Lapsley, 2003; Lapsley and Wright, 2004), we show that the standards governing EVA™ emerged in response to a range of more specific and partly competing programmes centred on diverse innovations. The mediating role of the Ministry of Finance and the SEPO was intimately tied up with a process where EVA™ had to be adapted to other 'global' innovations, such as the Balanced Scorecard and ultimately TQM, to persist in Thai SOEs. This insight resonates with prior research on MAIs, showing that innovations can influence each other and form intricate hybrids (Ax and Bjørnenak, 2005; Modell, 2009), but it has been largely overlooked in the broader literature on regulation informing this paper. Whilst recognising the programmatic nature of regulation (Braithwaite, 2008; Djelic and Sahlin, 2009; Levi-Faure, 2005) and the multiplicity of standards governing specific innovations (Djelic and den Hond, 2014; Rasche, 2010; Timmermans and Epstein, 2010), little attention has been paid to how particular regulatory standards are influenced by diverse reform programmes underpinning the *supply* of management innovations. Extending research on regulation to investigate such supply-side dynamics is important for enhancing our understanding of how multiple, 'global' innovations compete for attention and affect the regulatory standards which, in turn, condition the scope for context-specific adaptations.

Second, our view of MAIs as embedded in more or less competing reform programmes draws attention to the need to revise the conception of the state actors involved in regulatory processes. In the Thai SOE sector, the initial need for adaptations was reinforced by the fact that the reform programmes, centred on EVA^{TM} and the Balanced Scorecard, were endorsed by two state actors (i.e., Prime Minister Shinawatra and the Ministry of Finance) with slightly diverging interests. This contrasts with the literature on regulation informing this paper, which has mainly tended to distinguish between state and non-state actors without recognising that the former may be made up of multiple actors endorsing diverse reform programmes (e.g., Djelic, 2011; Djelic and Sahlin, 2009; Rasche, 2010; Timmermans and Epstein, 2010). This tendency to conceive of state actors as relatively monolithic entities is possibly due to the ambition to move away from a view of the nation state as the primary source of regulatory powers and the heavy emphasis on standardisation as a voluntary process (see Timmermans and Epstein, 2010). However, our findings underline the need to revise this view of state actors to better account for the diverse political agendas that buttress the reform programmes, which affect regulatory standards, and to advance a more fine-grained understanding of which interests come to influence the diffusion and regulation of particular innovations.

Turning now to the literature on the diffusion and adaptation of MAIs, our findings make an important contribution by providing detailed insights into how regulatees can influence the evolution of regulatory standards and how this imbues such standards with considerable flexibility. Although similar observations have been made in relation to other forms of accounting standards (e.g., Alon and Dwyer, 2016; Bozanic *et al*., 2012; Mehrpouya and Samiolo, 2016), the literature on MAIs has been dominated by a view of regulatees as relatively passive recipients who have few opportunities to influence the regulatory standards governing such innovations (e.g., Arnaboldi and Lapsley, 2003; Cavalluzzo and Ittner, 2004; Jackson and Lapsley, 2003; Lapsley and Wright, 2004; Malmi, 1999). Not even where the mediating role of regulators has been a key focal point (Hopper and Major, 2007; Modell *et al*., 2007) have researchers extended the analysis to examine how such mediation is affected by the active involvement of regulatees in the standard-setting process. By contrast, our findings show that close consultation between the regulators and the regulatees throughout the diffusion of EVA^{TM} enabled the latter to exercise considerable influence over the mix of choices and restrictions embedded in the evolving regulatory standards.

These findings suggest a need to re-think how MAIs, which are implicated in regulatory processes, evolve as they diffuse across organisations. In particular, they remind us that the flexibility of MAIs is not exclusively due to their suppliers who skilfully adapt their innovations to fit particular populations of organisations (see e.g., Ax and Bjørnenak, 2005, 2007) and/or to the regulators who undertake further adaptations at an early stage of the diffusion process (see e.g., Chang, 2009; Suuthewasinnon *et al*., 2016). Closer attention to how regulators and, not least, regulatees influence the specific attributes of MAIs *throughout* the diffusion process can help to unpack the ways in which innovations evolve over time. This has important implications for large-scale diffusion studies which have traditionally linked the ability of organisations to adapt innovations to whether they are early or late adopters (e.g., Ansari *et al*., 2010; Malmi, 1999; Strang and Soule, 1998; Westphal *et al.* 1997). The logic behind this traditional view of adaptation is that early adopters have greater opportunities to influence innovations, whilst later adopters tend to be faced with highly standardised and less malleable versions of the innovations. By contrast, our findings suggest that we should conceive of adaptation as an ongoing phenomenon which regulators and regulatees can continue to influence over time. We thus urge future studies of the diffusion of MAIs, which are implicated in regulatory processes, to at least complement the traditional distinction between early and late adopters with an analysis of whether and how individual adopters (regulatees) interact with the regulators and how this affects the adaptation of the innovations at various stages of the diffusion process.

In contrast to prior research, which explores the mediating role of regulators (Hopper and Major, 2007; Modell *et al*., 2007), we also draw attention to two contextual factors which can condition the ability of regulatees to adapt MAIs and give rise to variations in their use. The first factor concerns the influence of industry-specific regulations on the ability of regulatees to take advantage of the flexibility resulting from the regulators' mediation. Whilst both UtilityCo and BankCo were involved in the ongoing consultations with the SEPO, the industry-specific regulations surrounding electricity production compelled UtilityCo to comply mainly with the SEPO's minimum requirements concerning the use of EVA^{TM}. In contrast, as BankCo experienced fewer difficulties in reconciling EVA^{TM} with the regulations governing the financial services industry, it was able to use EVA^{TM} more extensively to support its strategic re-orientation. These findings respond to recent calls for greater attention to be paid to the way in which industry differences can affect management accounting practices (Messner, 2016). Whilst Messner (2016) called for more comparative research into

the relative impact of specific types of regulation across different industries, we show that industry-specific regulations can also exercise a strong influence on individual regulatees and that this conditions their ability to comply with regulatory standards which are common across industries. This raises the question of what regulators of MAIs need to do to facilitate compliance with regulatory standards across a broad range of industries. Consistent with the broader, sociological literature informing this paper (see Timmermans and Epstein, 2010), our findings suggest that this requires the standards to be imbued with considerable flexibility. In the Thai SOE sector, this was facilitated by the regulators' endorsement of reform programmes that deviated somewhat from the relatively forceful application of EVA™ pursued by Prime Minister Shinawatra and their sensitivity to the needs of the regulatees. However, there may be situations where regulators have strong vested interests in particular reform programmes and therefore force regulatees to comply with more rigid standards. Whilst this is reminiscent of the view of regulation as a matter of unilateral imposition of regulatory standards, which has long prevailed in research on the diffusion of MAIs (e.g., Cavalluzzo and Ittner, 2004; Jackson and Lapsley, 2003; Lapsley and Wright, 2004; Malmi, 1999), further research is required into how this affects the efficacy of regulation across different industries. For instance, future research could explore whether the use of more rigid regulation of MAIs is more or less suitable across different industries, depending on how they relate to industry-specific regulations. It would also be worthwhile to examine whether industry-specific conditions make regulatees more or less powerful vis-à-vis the regulators and how this affects their ability to influence the regulatory standards that govern MAIs. Finally, further, comparative research is required across settings where the regulation of MAIs is characterised by varying degrees of flexibility to assess how variations in regulation affect the propensity for compliance.

Turning to the second contextual factor to which we want to draw attention, our case studies in UtilityCo and BankCo illustrate how the efforts of regulators to adapt MAIs to the general cultural characteristics, which prevail within particular populations of organisations, interact with more organisation-specific cultures. Although the SEPO recognised the need to adapt EVA™ to the cultural characteristics of Thai society, especially those encapsulated in the notion of *Krengjai*, organisation-specific cultural characteristics also shaped the possibilities for further adaptation. Whereas UtilityCo experienced significant difficulties in reconciling EVA™ with the work-related values of its employees, BankCo experienced fewer problems in this regard and, furthermore, was able to use EVA™ to change employee mind sets in line

with its changing strategic priorities. These findings are similar to those of Canato *et al.* (2013), who showed that prolonged compulsory use of management innovations can contribute to a change in organisational cultures. However, the differences between UtilityCo and BankCo point to the need to examine how other organisation-specific factors, such as the pursuit of different organisational strategies, can influence the way in which managers exploit the compulsory use of specific innovations to shape organisational cultures. These findings extend prior research on the diffusion of MAIs, which has mainly examined how cultural characteristics influence the adoption of such innovations (Ax and Greve, 2017; Baird *et al*., 2004), by showing that the introduction of innovations can lead to changes in organisational cultures. Furthermore, our observations suggest that managers' use of MAIs to effect cultural change can be reinforced or weakened by the organisational strategies being pursued. Exploring such broader change dynamics could extend research on how MAIs are implicated in the shaping of organisational cultures. Our findings also point to the need for regulators to be sensitive to how different organisational cultures and strategies influence the way MAIs are used to comply with regulatory standards.

Taken together, the above discussion emphasises that the diffusion and adaptation of MAIs are implicated in a complex interplay with the regulatory standards that evolve within particular societal sectors and across different industries. This study has shed light on these relationships by drawing attention to how regulators mediate the adaptation of MAIs and how regulatees can influence the regulatory standards that govern such innovations. However, as indicated above, there are ample opportunities to extend the research in various directions.

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Phases in the development of EVA™	Introduction of EVA™	Compulsory use and further adaptations of EVA™	Adaptation of EVA™ to the SEPAS
Time period	2001-2006	2006-2010	2010-2012
Reform context	2001: Election of Thaksin Shinawatra as Prime Minister. 2002: Stern Stewart invited to Thailand. 2003-2005: Feasibility study and pilot projects for EVA™ commissioned by the SEPO.	2006: EVA™ adoption compulsory for the majority of SOEs. 2006: Ousting of the Shinawatra government. 2006-2009: The SEPO working closely with individual SOEs to implement and develop the EVA™ system.	2010: Introduction of the SEPAS. 2011-2012: The SEPAS gradually adopted and implemented in individual SOEs.
Supply-side adaptations	EVA™ reconciled with the SEPES and the Balanced Scorecard instead of serving as a stand-alone system.	N/A.	Strong influence from the MBNQA on the SEPAS.
Adaptations of regulatory standards	EVA™ integrated into extant performance agreements. Capital charges adapted to Thai capital markets conditions. Incentives linked to EVA™ adapted to extant regulation of bonuses.	Reduced weight of EVA™ in performance agreements. Reduced pressures to create independent EVA™ centres. Abandonment of continuous improvement targets linked to EVA™.	No specific weight attached to EVA™ in performance agreements. Reduced emphasis on EVA™ results for performance evaluation.
Organisation-specific adaptations among regulatees.	N/A.	UtilityCo: Initially aiming at extensive implementation of EVA™ in anticipation of privatisation. Gradually reducing these ambitions and extensively involved in influencing evolving regulatory standards.	UtilityCo: Continuing to influence regulatory standards and adopting the SEPAS at an early stage. Complying with the SEPO's minimum requirements for the use of EVA™.
		BankCo: Going beyond the minimum regulatory requirements, due to consistency between EVA™ and industry-specific regulations and cultural characteristics.	BankCo: Continuing to go beyond minimum regulatory requirements and attaching increasing weight to EVA™ in performance agreements and incentive plans.

Table 1. The development of EVA™ in the Thai SOE sector.

Appendix: Lists of Interviewees

Table A1. Interviews with suppliers, regulators and SOEs not included as case studies.

Interviewee	Duration (min.)	Date				
		2010	2011	2012	2014	2016
Senior Executive and Fiscal Advisor, the MOF (responsible for overseeing SEPO)	120	12/10				
Deputy Director, SEPO	60	10/11				
Head of SOE Performance Evaluation Division, SOE Performance Management and Evaluation Bureau, SEPO	85	14/09				
	40	11/10				
	85		02/08			
	35			12/05		
	45				11/12	
	15*					30/6
Fiscal Analyst (Professional Level), SOE Performance Management and Evaluation Bureau, SEPO	60	11/10				
Analyst, SOE Performance Management and Evaluation Bureau, SEPO	30*		22/08			
Fiscal Analyst (Professional Level), Policy and Planning Bureau, SEPO	60		16/09			
Account Officer, State Securities Management Bureau, SEPO	30*		16/09			
Vice Director, Senior Analyst, Analyst, Thai Rating and Information Services Co., Ltd. (TRIS)	60		17/01			
Chairman, Stern Stewart Thailand (SST)	60	07/10				
Ex-Country Manager, SST	45	29/12				
Ex-Associate Consultant, SST	40		27/12			
Head, Analyst, Business Planning Department, Corporate Business Unit, PTT	120	29/09				
Vice President, Business Planning Department, Gas Business Unit, PTT	45*	09/11				
Vice President, Business Planning Department, Oil Business Unit, PTT	80	19/11				
Analyst, Business Planning Department, Oil Business Unit, PTT	60	19/11				
Senior Analyst, Research and Development Department, Corporate Business Unit, PTT	90	24/12				
Planner, Strategic Planning Department Analyst, Finance and Accounting Group, PTT Exploration and Production Public Company	50	01/12				

Limited						
Ex-Vice Director, Port Authority of Thailand	30	22/11				
Director, Policy and Planning Division, Port Authority of Thailand	95	11/11				
Senior Analyst, Policy and Planning Division, Port Authority of Thailand	75	23/11				
Director, Office of Accounting, Port Authority of Thailand	100	26/11				
Total number of interviews		**17**	**6**	**1**	**1**	**1**

* Interviews were not recorded.

Table A2. Interviews in UtilityCo.

Interviewee	**Duration (min.)**	**Date**				
		2010	**2011**	**2012**	**2014**	**2016**
Deputy Governor (the Chairman of the EVA committee), Policy and Planning BU	60	09/12				
Assistant Governor, Policy and Panning BU	60	02/11				
Assistant Director, Chief, Portfolio Management Division, Policy and Planning BU	181	22/09				
	90		22/07			
Chief, Corporate Planning Division, Policy and Planning BU	90	21/10				
Assistant Director, Energy Economics Division, Policy and Planning BU	50		09/09			
Deputy Governor, Accounting and Finance BU	60	08/12				
Assistant Governor, Accounting and Finance BU	175		26/08			
Director, Controller Division, Accounting and Finance BU	130	15/10				
	120		13/09			
	90			09/01		
	60				11/12	
	30					01/07
Accountant level 10, Generation Area Accounting and Budget Division, Accounting and Finance BU	81	08/10				
	30		13/12			
Chief Accountant, South Bangkok Power Plant Accounting and Finance Section, Generation Area Accounting and Budget Division, Accounting and Finance BU	100	17/11				
Accountant level 10, Transmission Area Accounting and Budget Division, Accounting and Finance BU	67		07/09			
	90		09/09			

Chief Accountant level 10, Development Area Accounting and Budget Division, Accounting and Finance BU	30*					09/06
Accountant level 10, Corporate Office Area Accounting and Budget Division, Accounting and Finance BU	50		07/09			
Engineer level 11, Development BU Engineer level 10, Transmission BU	120	02/11				
Assistant Governor, Architect Level 10, Fuel BU	120		23/08			
Chief, Human Resources Division, Administration BU	50		09/09			
	30		13/12			
Economist level 10, Office of the Governor BU	120		18/08			
	90		13/12			
Chief, Power Generation Agreement Section, Planning and Quality Development Division, Generation BU	120		17/08			
Chief, Generation Area Planning and Evaluation Section, Planning and Quality Development Division, Generation BU	95	01/11				
Deputy Director, Chief (Maintenance Unit), Supervisor (Generating Unit), Staff, South Bangkok Power Plant, Generation BU	152	16/12				
Total number of interviews		**11**	**14**	**1**	**1**	**2**

Table A3. Interviews in BankCo.

Interviewee	**Duration (min.)**	**Date**				
		2010	**2011**	**2012**	**2014**	**2016**
President	30		20/12			
Senior Executive Vice President, Financial Management Group and Risk Management Group	40		11/01			
Executive Vice President, Financial Management Group	93	17/09				
	60		14/07			
Senior Director, Planning and Budgeting Division, Financial Management Group	60	24/11				
Director, Management Information Division, Financial Management Group	150	29/09				
	130		21/07			
	60			10/01		
	40				12/12	
	60					15/06
Chief, Senior Staff, Junior Staff,	180		28/07			

Management Information Division, Financial Management Group						
Executive Vice President, Government & State Enterprise Relations Group	60*	08/11				
Assistant Director, Government Office Relation Division, Government & State Enterprise Relations Group	90		11/09			
Director, Vice Director, Credit Restructuring and Asset Management Group	50	12/11				
Executive Vice President, Banking Operation Department, Operation Group	40	24/11				
Senior Director , Risk Management Group	50	09/11				
Senior Executive Vice President , Electronic Banking and Cash Management Group	50*		03/08			
Senior Director , Medium Business 1 Division, Business Centre Group	65		18/07			
Director, Credit Risk Transaction Management-Central Region Division, Credit Risk Transaction Management Group	80		18/07			
Senior Director, Legal Support & Loan Collection Expedition Division, Compliance and Legal Management Group	60		29/08			
Senior Director, Staff, Credit Operation Division, Operation Group	120		16/08			
Executive Vice President, Human Resources & Corporate Governance Group	40	12/11				
Assistant Director, Staff Employment Division, Human Resources & Corporate Governance Group				09/01		
Assistant Director , Staff Development & Training Division, Human Resources & Corporate Governance Group	30*		23/08			
Staff, Staff Development & Training Division, Human Resources & Corporate Governance Group	45		23/08			
Senior Director, Corporate Banking 1 Division, Corporate Banking 1 Group	50	12/11				
Senior Director, Industrial Finance 1 Division, Corporate Banking 2 Group	60		29/08			
Executive Vice President, Network & Retail Banking Products Strategy Department, Retail Business and Network Group	82	09/11				
Senior Director, Metropolitan Network Region 1 Department, Retail Business and Network Group	50	08/11				
Director, Sub-Regional Office 1, Metropolitan Network Region 1 Department, Retail Business and Network Group	90			06/01		
Branch Manager 1, Metropolitan Network Region 1 Department, Retail Business and Network Group	94	19/11				
Branch Manager 2, Metropolitan Network Region 1	83	09/12				

Department, Retail Business and Network Group						
Total number of interviews		**13**	**14**	**3**	**1**	**1**

* Interviews were not recorded